

Migratory Landbird Conservation on the Lassen National Forest

Whaleback Fire Salvage Project

Eagle Lake Ranger District

Lassen National Forest

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Under the National Forest Management Act (NFMA), the Forest Service is directed to “provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives.” (P.L. 94-588, Sec 6 (g) (3) (B)). Direction for integrating migratory bird conservation into forest management and planning includes the January 2000 USDA Forest Service (FS) Landbird Conservation Strategic Plan; the Partners in Flight (PIF) Landbird Conservation Plans; the 2001 Executive Order (EO) 13186; and the 2017 Department of Interior Solicitor’s Opinion M-37050. Within the National Forests, migratory bird conservation focuses on providing a diversity of bird habitats at multiple spatial and temporal scales over the long-term. Our actions also include promoting migratory bird conservation through enhanced collaboration and cooperation with the Fish and Wildlife Service as well as other federal, state, tribal and local governments.

To facilitate a regional approach to bird conservation, regional geographic units called Bird Conservation Regions (BCRs) were developed under the North America Bird Conservation Initiative (<http://www.nabci-us.org/bcrs.html>). BCRs encompass landscapes with similar bird communities, habitats, and resource issues. In *Birds of Conservation Concern 2008*, BCR-specific Birds of Conservation Concern (BCC) were identified by the USFWS (2008) that are in greatest need of conservation action and proactive management to prevent the need to list them as endangered or threatened. The Whaleback Fire Project is located within the Sierra Nevada BCR. Eleven species of Birds of Conservation Concern were identified for this BCR, which include: bald eagle, peregrine falcon, flammulated owl, spotted owl, black swift, calliope hummingbird, Lewis’ woodpecker, Williamson’s sapsucker, olive-sided flycatcher, willow flycatcher and Cassin’s finch. Of these, there is no known nesting habitat for peregrine falcon, spotted owl, black swift, and willow flycatcher within the proposed treatment areas, and bald eagles were addressed in this project’s biological evaluation.

The Whaleback Fire Salvage Project, Background

The Forest Service is proposing to take management action to respond to conditions created by the Whaleback Fire which burned approximately 18,182 acres of National Forest Service (NFS) lands on the Eagle Lake Ranger District of the Lassen National Forest (LNF) from July 27 to August 8, 2018. The eastern half the fire burned a flat rocky basalt flow, known as Brockman Flat, that supports primarily montane chaparral vegetation between Lassen County Road A-1, the community of Spalding, and the western shore of Eagle Lake. The Brockman Flat Fire Salvage project evaluated 248 acres separately in order to promptly reduce safety hazards and meet restoration objectives economically.

West of Lassen County Road A-1 across Whaleback Mountain the landscape consists of dry upland coniferous forest. This area was evaluated for opportunities and need to: reduce safety hazards along roads as well as in treatment areas; recover the value of fire-killed trees; reduce the danger and difficulty of suppressing future wildfires; and accelerate recovery of forested conditions and habitats in burned forest. Proposed activities include salvaging fire killed trees; treatment of activity slash and non-merchantable trees; falling and/or removal of hazard trees along roads; broadcast and pile burning for reforestation site preparation and

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fuels reduction; planting burned areas; enhancing aspen communities; managing the transportation system; and providing water sources for wildlife.

This project encompasses 7,073 acres within the Eagle (14) and Crater (19) management areas as identified in the LNF Land and Resource Management Plan. Topography varies from flat to sloping terrain with an elevational range of approximately 4,200 feet to 6,378 feet. Most slopes within the proposed treatment areas are less than 35 percent, with some short pitches that exceed 35 percent. Species composition and structure of forest stands are influenced by elevation, landscape position, aspect, and stand history. Forest stands are comprised primarily of eastside pine forest and mixed conifer, along with shrub, riparian, and aspen communities. Predominant tree species within the project area include ponderosa pine (*Pinus ponderosa*), Jeffery pine (*Pinus jeffreyi*), white fir (*Abies concolor*), incense cedar (*Calocedrus decurrens*), and sugar pine (*Pinus lambertiana*). There are also some isolated and sparse populations of Douglas fir (*Pseudotsuzesii*) and western white pine (*Pinus monticola*) throughout the project area. Common shrub species include sagebrush (*Artemisia tridentata*), tobaccobrush (*Ceanothus velutinus*), manzanita (*Arctostaphylos patula*), bitterbrush (*Purshia tridentata*), and rabbitbrush (*Ericameria nauseosa*). Plantations of various sizes and classes also occur in the Whaleback Fire area.

The Whaleback Fire burned 18,182 acres of grass, brush and trees. The fire resulted in a mosaic of vegetation burn severity effects. There are areas where tree mortality is 100 percent while other areas still support a green tree component. Overall, the majority of the area, 70 percent, experienced high to very high burn severity effects (greater than 75 percent basal area tree mortality). In the remaining area, approximately 0.3 percent of the NFS land acreage did not burn in the Whaleback Fire, 13 percent experienced low burn severity effects, and 16 percent burned at moderate burn severity. Vegetation burned with a similar severity pattern within the Whaleback treatment areas. (See Table 1).

Table 1. Number of acres and percent area burned by basal area mortality classes within the Whaleback Fire perimeter (total) and within the treatment units.

Basal Area Mortality	Total Whaleback Acres	Percentage of Acres	Treatment Acres	Percentage of Treatment Acres
Unburned	61	0.3	4	0.1
Low 0-<25%	2,359	13	78	2
Moderate 25 - <75%	2,963	16	1,746	37
High >75%	12,799	70	2,849	61
TOTAL	18,182	100%	4,677	100%

The Whaleback Fire Salvage Project, Proposed Action

The proposed action was developed by evaluating existing vegetation conditions, burn patterns and intensities, and land allocations within Whaleback Fire perimeter. Priority for post-fire management actions was given to large high severity burn patches, high use roads, and fuel treatments. The Forest Service proposes to implement salvage harvest and fuels reduction treatments to address Goals 1-3 related to reducing safety hazards along roads as well as in treatment areas, recovering the value of fire-killed trees, reducing future fuel loads; actions related to Goal 5 are the same but include conifer removal to create the proper growing environment; actions to address Goal 4 include site preparation and reforestation to re-establish forested conditions and habitats in burned forest.

Where feasible the existing transportation system would be used to provide access to treatment units. Road maintenance includes dust abatement, erosion controls, and maintenance; all of which will be implemented using best management practices. Where existing roads systems are not adequate to provide access to treatment areas, temporary roads may be constructed. Upon completion of use, temporary roads would be decommissioned.

Salvage Removal

Area Salvage Harvest

The Forest Service is proposing to salvage harvest fire killed and fire injured trees on approximately 2,865 acres within the perimeter of the Whaleback Fire on the Eagle Lake Ranger District. Fire killed and fire injured trees would be removed that either (1) have no green needles or (2) meet the criteria of a 0.7 or greater probability of mortality (Pm) in areas that are greater than 150 feet from the road or (3) meet the criteria of a 0.5 greater probability of mortality (Pm) that are less than 150 feet off the road in the *Marking Guidelines for Fire Injured Trees in California* developed by Region 5 Forest Health Protection.

The salvage harvest operations would utilize ground-based, mechanical harvesting to remove or rearrange fire-killed and fire-injured trees from treatment areas on slopes less than 35 percent. On slopes greater than 35 percent, trees that can be reached with a boom arm would be removed. Hand felling would be used if mechanical treatments are cost prohibitive or in areas inaccessible to mechanical equipment. Remaining biomass trees that are not mechanically removed and/or activity-generated fuels would either be masticated, chipped, broadcast burned, or piled mechanically or by hand and piles burned.

Snags would be retained in clumps ranging in size from 0.1 acre to 2 acres, representing the largest diameter snag classes in the unit. Snag retention would comprise approximately 5-10 percent of the salvage treatment units and would be distributed across the unit to maintain diversity. Snag clumps retained within RCAs and inoperable areas that meet the above criteria would be incorporated into the total percentage.

Roadside Hazard Tree Removal

The majority of roadside hazard trees proposed for removal occur in high severity burned areas; however, hazard trees within mixed severity burned areas would also be included to ensure the safety of road users in all areas where burned trees pose a genuine risk of falling into the roadway. Approximately 37 miles (up to 1,750

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acres) of hazard tree removal would occur along Forest Service Roads 32N02 (21 Road), 33N31, 33N94, 33N38, 32N05Y, 32N77, and County Road A1.

Trees that have potential to reach the road and are dead and dying or live trees that are sufficiently damaged or defective to pose a risk of falling within the next 5 years would be removed. Dying trees would be identified using the publication *Marking Guidelines for Fire-Injured Trees in California* at a 0.5 (Pm) probability of mortality to reduce the number of treatment entries needed to achieve safety conditions. *Hazard Tree Guidelines for Forest Service Facilities and Roads in Pacific Southwest Region* would also be used to identify live damaged and defective trees for removal. Hazard trees with commercial value (generally greater than 10 inches diameter breast height (dbh) depending on timing of removal) would be commercially harvested. Non-merchantable trees would also be felled and left on site, or masticated, chipped, broadcast burned, or piled mechanically or by hand and the piles burned.

Fuels Reduction

Fuel treatments would be implemented in areas where fuel loading and dead trees exceed snag and log retention guidelines following salvage removal. In fuel breaks that burned at moderate severity the treatment area would encompass up to 500 feet from the following roads: 33N94, 33N38, 32N05Y, 32N77, and County Road A1. In these fuel breaks, the primary focus would be to reduce any fire killed and fire-injured non-merchantable trees generally less than 10 inches dbh. The following methods would be used to meet fuel reduction objectives:

Mechanical

Ground-based, mechanical equipment would be utilized to remove or rearrange fire-killed and fire-injured trees from treatment areas on slopes 35 percent or less. Activity-generated fuels would be masticated, chipped, broadcast burned, or piled mechanically and piles later burned.

Hand

Hand felling would be used if mechanical treatments are cost prohibitive or in areas inaccessible to mechanical equipment. Hand felling treatments would occur within the same footprint identified for mechanical treatments. Natural and activity-generated fuels would either be chipped, broadcast burned, or piled by hand and piles burned.

Reforestation

Treatment units that experienced moderate to high vegetation burn severity effects would be hand planted with 1-2 year-old conifer seedlings on approximately 3,906 acres and 771 acres would be treated for natural regeneration. Species mixes used for planting would emphasize fire resistant and shade intolerant pines where appropriate using a mix of ponderosa pine, Jeffrey pine, sugar pine, incense cedar, Douglas fir, and western white pine. Planting strategies would be designed to balance economics, long-term management feasibility, and desired future conditions. Planting strategies would include conventional (1,369 acres), microsite (881 acres), micro-cluster (903 acres), combination of microsite and micro-cluster (333 acres), and founder stand (419 acres) planting at various densities (12 feet – 20 feet). These techniques would increase landscape

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heterogeneity and provide for forest resiliency and wildlife habitat diversity within burned forest stands. Planting would be prioritized furthest from live-tree sources and productive sites with potential lower fire intensities (i.e., moist, flatter, and cool-air microsites).

Salvage logging would be completed before conifer tree seedling planting occurs, unless site preparation for planting trees is not needed to treat residual fuels. Preparing the sites for planting and future release of competing vegetation would either be done by hand or utilizing mechanized equipment. Site preparation (e.g. mastication, piling) would not occur within snag retention clumps (if any) and would retain all snags identified in the Hazard Tree Removal treatments; however, where necessary, the retained standing snags posing a safety hazard to planting crews and other workers in the area would either be felled to provide a safe working environment or buffered away from to avoid the need for felling.

Manual Release

Manual release of competing vegetation would occur on all planted areas as needed within the first five years of planting. Manual release involves hand cutting (grubbing) competing vegetation within a five-foot radius of planted seedlings. Hand-cut vegetation would either be lopped and scattered or piled for burning.

Mechanical Release

If it is deemed more efficient and cost-effective based on-site conditions, mechanical release (generally masticating or pulling re-sprouted vegetation with an excavator that has a thumb bucket) may be used in all planted areas less than 35% slope.

Aspen Treatments

In aspen communities, conifers would be removed on 62 acres to provide the proper growing environment. Conifer retention within and adjacent to aspen communities was based on the severity and the residual live conifers component. In aspen communities that burned in large high severity patches, 40-80 ft²/acre of live conifer basal area would be retained. Conifer retention would preference fire resistant pine that are not directly shading aspen. In aspen communities that burned in small low to moderate burn severity patches up to 20 ft²/acre of conifer basal area would be retained of fire resistant pines less than 25 inches dbh. To increase aspen resilience in future fires, fire killed and fire injured trees that either (1) have no green needles or (2) meet the criteria of a 0.7 or greater probability of mortality (Pm) in the *Marking Guidelines for Fire Injured Trees in California* (Report #RO-11-01), developed by Region 5 Forest Health Protection would also be removed to reduce future fuel loads. Aspen treatment units would extend outward from the existing aspen community approximately 100 feet on all sides or to a logical break (e.g. open community edge, slope break, or road). Existing mature aspen trees would be protected during logging and vegetation treatment operations.

Hand thinning would be used in areas inaccessible to mechanical equipment. Inaccessible areas include those which are too steep or rocky for mechanical equipment to operate or have no access by road. Conifer material would be lopped and scattered or piled. Because of their susceptibility to heat damage piles would generally be located away from aspen boles and roots and later burned. Broadcast burning would take place

within aspen stands located in larger treatment areas after the next cohort of aspen is successfully recruited and only if light surface fuels exist within the stand.

Aspen units with excessive browsing from wildlife or livestock would either be fenced or a barrier would be created by hinging standing conifers in a jackstraw pattern to reduce browse impacts immediately following project implementation or when monitoring indicates that browsing pressure is impeding successful aspen recruitment.

Transportation Management

Road access would be needed for multiple entries in order to meet salvage, fuels reduction, and reforestation objectives. The Whaleback Project proposes to use existing Forest system roads wherever possible to access treatment units. Forest roads would be repaired and maintained as necessary to safely implement and maintain a sustainable road system for the Whaleback Fire project. Approximately 4.5 miles of non-system roads within the project area would be needed for project implementation. Roads UNE733, UNE738, UNE740, and UNE742 would be added to the Forest transportation system as maintenance level 1 roads. In addition, approximately 3.5 mile of road would receive reconstruction and storm proofing, which includes upgrading culverts, surfacing drainage crossings, clearing encroaching vegetation, constructing drainage dips and low water crossings. Approximately 2.0 miles of temporary road would be constructed for access during project implementation. These temporary roads would then be decommissioned by obliteration upon project completion.

The water source proposed for use in this project for dust abatement meets best management practice (BMP) standards and is located off an un-named spur off County Road 105 (T33N R10E, center of Sec 25).

Wildlife Water Sources

Three guzzlers would be located in upland sites within the Whaleback Fire perimeter. Sites are along 32N90Y in section 17, in section 9 on the north side of 32N05Y, and in section 21 on the west side of 32N77. Each guzzler would consist of an approximate 1,000 gallon tank from which wildlife would drink. At each guzzler a small 15 by 15 foot raised apron of corrugated roofing material would be constructed, if needed, to provide additional collecting surface sufficient to fill the tank. If needed, a small barbed wire fence would be constructed around the tank to exclude livestock.

Integrated design features (IDFs) directly related to wildlife and their habitat included:

1. Do not place snag retention clumps within 150 feet of roads.
2. Gray wolf Limited Operating Period (LOP): At this time there are no known gray wolf detections within or near the sale area. If den sites or pup rendezvous sites are discovered within the vicinity of the project area an LOP from March 1 through August 15 will be imposed. The LOP will encompass a 1 mile radius from discovered sites.
3. For bald eagle nest territories: Maintain a LOP prohibiting actions within approximately 0.36 miles of any active nest tree during the breeding season (January 1 through August 31)

4. Trees that are located outside of mapped treatment areas that are identified as hazards to roads or operators would be felled and left on the ground to contribute to downed log habitat.
5. If northern goshawk nest sites are discovered during project implementation, a LOP of February 15 through September 15 would be observed within 0.25 miles of the nest.
6. Restrict timber harvest equipment from traveling on the surface on top of the ice cave near county road A-1 to avoid potential for disturbance to the underground resource and for safety of the operator.

Project Effects to Migratory Landbirds

Likely impacts to habitats and select migratory bird populations resulting from the Whaleback Fire Salvage Project have been assessed in detail within the project MIS report and potential effects to select TES birds and their habitats have been assessed in the project's biological evaluation, including three of the eleven species of conservation concern for the Sierra Nevada (California spotted owl, willow flycatcher and bald eagle). Sierra Nevada BCR species that may be present within the project area include flammulated owls, Lewis' woodpecker, Williamson's sapsucker, olive-sided flycatcher, calliope hummingbird and Cassin's finch.

Snag retention standards within harvest units would serve to mitigate the effects of the project on flammulated owls, Lewis' woodpecker and Williamson's sapsucker, and tall retained snags would provide foraging perches for olive-sided flycatchers. In addition, large burned areas within the perimeter of the Whaleback Fire, including high- and moderate-severity burn areas, as well as majority of the area between County Road A-1 and Eagle Lake would remain untreated would retain habitat values for these species and other migratory landbirds. The effects of high severity fire within the proposed treatment areas likely negatively affected Cassin's finch habitat, as this species does consume pine seeds and green buds of conifers. Snags are not an important habitat component for this species. Reforestation efforts would hasten the return of a conifer component to the treatment areas, and thus would restore an important habitat component for these species faster than would the no action. Protection of aspen stands to avoid overbrowsing, as well as the other aspen restoration treatments, would serve to enhance potential calliope hummingbird habitat, such as in the Prison Springs area. An abundance of early seral vegetation arising from the fire would also benefit this species.

The project actions provide long-term net benefits by increasing habitat diversity and sustainability by reducing fuels and reforestation activities. Although some actions may have short-term adverse effects on some individual birds, adverse effects at the population level are not expected. Potential adverse effects to migratory bird species have been minimized through the adherence of LRMP Standards and Guidelines and other design features, including: snag retention standards, retention of large areas of high- and moderate-severity burned forest, variability in reforestation practices, and provisioning of water through establishment of wildlife guzzlers within the burned area.

Changes to habitat as a result of the Whaleback Fire Salvage Project would primarily affect migratory bird species that utilize burned forests or snags to meet their habitat needs. Effects to habitat of select migratory

species including the black-backed woodpecker and hairy woodpecker which utilize burned forest habitat or snags as important habitat attributes have been assessed in the Management Indicator Species (MIS) report for this project. Effects to select Threatened, Endangered and USFS Sensitive birds and their habitats have been analyzed in the Biological Evaluation for this project. Of the eleven species of Birds of Conservation Concern, three (bald eagle, California spotted owl, and willow flycatcher) were specifically addressed in this project's Biological Evaluation. None of the remaining species are known to specifically require burned forest habitat.

Impacts to migratory landbirds are expected to vary across the analysis area because the effects of past, present, and reasonably foreseeable future actions vary spatially. For instance, vegetative response within the non-treatment areas would be quite different than within units salvaged and reforested. Future habitat within reforested units will vary depending on the density of planted trees and other variables. Due to the complexity of these spatial variations and because each species responds differently to its environment, the direction, magnitude, and duration of effects to migratory landbirds are also expected to vary.

This inherent variability plus the project design features are expected to moderate effects to migratory landbirds. For example, unaltered burned forest habitat would be retained in areas not receiving treatment. Patches of burned forest and lightly salvaged burned forest would be maintained throughout the area in salvage units in which 5 to 10 percent will be unsalvaged.

Large areas of low and moderately burned areas would be left untreated. Leaving these areas untreated will provide a mosaic of forest types and habitat conditions within the project area. This will provide habitat for a wide variety of migratory bird species, including olive-sided flycatchers. In addition, snag retention standards within harvest units would serve to mitigate the effects of the project on flammulated owls, Lewis' woodpecker and Williamson's sapsucker, and tall retained snags would provide foraging perches for olive-sided flycatchers. Non-harvested snags of all sizes within low and moderately burned forest would also provide habitat for these and other avian species.

The proposed action also considered the importance of understory vegetation and other vegetative communities within the fire perimeter. Planting strategies would include conventional (1,369 acres), microsite (881 acres), micro-cluster (903 acres), combination of microsite and micro-cluster (333), and founder (419) stand planting at various densities (12 feet – 20 feet). These techniques would increase landscape heterogeneity and provide for forest resiliency and wildlife habitat diversity within burned forest stands. Planting would be prioritized furthest from live-tree sources and productive sites with potential lower fire intensities (i.e., moist, flatter, and cool-air microsites). Other design features that would provide for heterogeneity within reforested areas include, 1) Reforestation would not occur within 200 feet of conifer stands with a live tree component greater than 50%, 2) Reforestation would not occur within 100 feet of aspen treatment units, riparian communities, or meadows, 3) Along forest service roads, no planting would occur from the road bed and 50 feet into the planting unit, and 50 feet from the road bed and the next 75 feet, low-density spacing would be used, 4) Along County Road A1, no planting would occur from the road bed and 100 feet into the planting unit, and low-density wide spacing planting scheme would be used to plant tree seedlings between 100 feet and 200 feet from the road bed, and, 5) No reforestation will occur within 50 feet of snag

retention clumps nor within 50 feet of to provide a safe working environment for workers. These strategies to alter planting densities would serve to retain and promote understory vegetation and other plant types.

All of these design features, plus the snag retention, would help insure a diversity of wildlife habitats is retained and created within the Whaleback Fire Salvage Project area.

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